

Sony International (Europe) GmbH
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Claims

1. Processing system for one or more communication networks, providing applications with a platform- and network-independent framework for achieving cross-adaptability by providing components for QoS management in the communication network(s) by means of a component coordinator unit (10).
2. Processing system according to claim 1, characterised in,
that said generic framework uses a platform- and network-neutral set of application adaptation mechanisms, including a QoS negotiation and re-negotiation protocol.
3. Processing system according to claim 2, characterised in,
that said protocol uses piggyback mechanisms for QoS negotiating and re-negotiating.
4. Processing system according to claim 1, 2 or 3, characterised in,
that said generic framework bases on a modular progressive approach to address different types of applications which span from existing application to envisioned more sophisticated applications that rely on middleware for achieving cross-adaptability.
5. Processing system according to one of the claims 1 to 4, characterised in,
that said generic framework bases on an application model in which each application is allocated to one of a set of application classes having different QoS level with respect to resource usage.
6. Processing system according to claim 5, characterised in,
that fallback mechanisms are provided for a backward-compatibility between the application classes.
7. Processing system according to claim 5 or 6, characterised in,

said generic framework bases on a communication model with different functional communication levels for exploiting the various resources in a coordinated manner so as to achieve the desired overall QoS level.

- 5 8. Processing system according to claim 7,
characterised in,
that said communication levels include an application (1), a session (2), an association (3) and a stream (4) level.
- 10 9. Processing system according to one of the claims 1 to 8,
characterised by
a QoS broker unit (8) being managed by the component coordinator unit (10) and
coordinating local and remote resource management by using said negotiation and re-
negotiation protocol.
- 15 10. Processing system according to claim 9,
characterised by
a network resource booker unit (9) being directly coordinated by the QoS broker unit
(8) and managing network resource reservation mechanisms in a implementation
20 independent way.
- 25 11. Processing system according to claim 9 or 10,
characterised by
a session manager unit (11) being directly coordinated by the QoS broker unit (8) for
25 establishing and managing sessions in an implementation independent way.
- 30 12. Processing system according to claim 11,
characterised by
one or more chain coordinator units (12) being managed by the QoS broker unit (8)
30 through the session manager unit (11) and managing one or more component chains,
each chain being associated with a stream.
- 35 13. Processing system according to claim 12,
characterised by
35 one or more CPU-manager units (13) coordinated by the chain coordinator units (12)
for managing CPU-resource usage.
14. Processing system according to claim 13,
characterised by

a CPU-resource controller unit (17) providing said CPU-manager units (13) with platform-independent resource status information retrieval and control.

15. Processing system according to one of the claims 12 to 14,
5 characterised by
one or more memory manager units (14) coordinated by the chain coordinator units (12) for managing memory resource usage.

16. Processing system according to claim 15,
10 characterised by
a memory controlling unit (18) for providing the memory manager units (14) with platform-independent resource status information retrieval and control.

17. Processing system according to one of the claims 12 to 16,
15 characterised by
one or more network protocol manager units (15) coordinated by the chain coordinator units (12) for managing network protocol resource usage.

18. Processing system according to claim 17,
20 characterised by
a network protocol controller unit (19) for providing the network protocol manager units (15) with resource status information retrieval and control.

19. Processing system according to one of the claims 12 to 18,
25 characterised by
one or more multimedia components (16) coordinated by the chain coordinator units (12) for managing multimedia resources.

20. Processing system according to claim 19,
30 characterised by
a multimedia controller (20) providing the multimedia component units (16) with platform-independent resource status information retrieval and control.

21. Pieces of software for one or more communication network, being loadable in
35 memory means of one or more nodes of the one or more communication networks, providing
applications with a platform- and network-independent framework for achieving cross-adaptability by providing components for QoS management in the communication network(s) by means of a component coordinator unit (10).

22. Pieces of software according to claim 21,
characterised in,
that said generic framework uses a platform- and network-neutral set of application
5 adaptation mechanisms including a QoS negotiation and re-negotiation protocol.

23. Pieces of software according to claim 22,
characterised in,
that said protocol uses piggyback mechanisms for QoS negotiating and re-negotiating.
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24. Pieces of software according to claim 21, 22 or 23,
characterised in,
that said generic framework bases on a modular progressive approach to address
different types of applications which span from existing applications to envisioned more
15 sophisticated applications that rely on middleware for achieving cross-adaptability.

25. Pieces of software according to one of the claims 21 to 24,
characterised in,
that said generic framework bases on an application model in which each application is
20 allocated to one of a set of application classes having different QoS level with respect to
resource usage.

26. Pieces of software according to claim 25,
characterised in,
25 that fallback mechanisms are provided for a backward-compatibility between the
application classes.

27. Pieces of software according to claim 25 or 26,
characterised in,
30 said generic framework bases on a communication model with different functional
communication levels for exploiting the various resources in a coordinated manner so as
to achieve the desired overall QoS level.

28. Pieces of software according to claim 27,
35 characterised in,
that said communication levels include an application (1), a session (2), an association
(3) and a stream (4) level.

29. Pieces of software according to one of the claims 22 to 28,

characterised by

a QoS broker unit (8) being managed by the component coordinator unit (10) and coordinating local and remote resource management by using said negotiation and re-negotiation protocol.

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30. Pieces of software according to claim 29,
characterised by

a network resource booker unit (9) being directly coordinated by the QoS broker unit (8) and managing network resource reservation mechanisms in an implementation independent way.

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31. Pieces of software according to claim 29 or 30,
characterised by

a session manager unit (11) being directly coordinated by the QoS broker unit (8) for establishing and managing sessions in an implementation independent way.

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32. Pieces of software according to claim 31,
characterised by

one or more chain coordinator units (12) being managed by the QoS broker unit (8) through the session manager unit (11) and managing one or more component chains, each chain being associated with a stream.

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33. Pieces of software according to claim 32,
characterised by

one or more CPU-manager units (13) coordinated by the chain coordinator units (12) for managing CPU-resource usage.

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34. Pieces of software according to claim 33,
characterised by

a CPU-resource controller unit (17) providing said CPU-manager units (13) with platform-independent resource status information retrieval and control.

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35. Pieces of software according to one of the claims 32 to 34,
characterised by

one or more memory manager units (14) coordinated by the chain coordinator units (12) for managing memory resource usage.

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36. Pieces of software according to claim 35,
characterised by

a memory controlling unit (18) for providing the memory manager units (14) with platform-independent resource status information retrieval and control.

37. Pieces of software according to one of the claims 32 to 36,
5 characterised by
one or more network protocol manager units (15) coordinated by the chain coordinator units (12) for managing network protocol resource usage.

38. Pieces of software according to claim 37,
10 characterised by
a network protocol controller unit (19) for providing the network protocol manager units (15) with resource status information retrieval and control.

39. Pieces of software according to one of the claims 32 to 38,
15 characterised by
one or more multimedia components (16) coordinated by the chain coordinator units (12) for managing multimedia resources.

40. Pieces of software according to claim 39,
20 characterised by
a multimedia controller (20) providing the multimedia component units (16) with platform-independent resource status information retrieval and control.